

REMARKS

Claims 1-3 and 21-26 are pending in the application. Claims 4-20 are cancelled without prejudice. New claims 21-26 have been added.

The present invention has been limited to a front fork of a motorcycle in which the friction of an oil seal is greater than the friction of a bush in the low speed operation range. A front fork for motorcycle has the following features: it is attached to a frame of a body with a caster angle and an allotted load of a body side load is small. As a result, a side force is not added to the front fork in low speed operation of the front fork, such as when traveling on a flat straight road surface, and thus the friction of an oil seal is greater than the friction of a bush. On the other hand, when the front fork is driven in a high speed, such as when passing through a rough road surface or the like having great irregularity, a side force is added to the front fork, and the friction of the bush is greater than the friction of the oil seal.

Furthermore, because the front fork is supported directly by hands of the rider on the motorcycle via a handle, the front fork has a feature that it is a hydraulic shock absorber whose operability can be felt sensitively by the rider.

Claims 1-3 were rejected under 35 USC § 103(a) as being obvious over US Patent No. 5148897 (*Vanroye*) in view of US Patent No. 6640541 (*Winkelman*) in further view of US Patent No. 5198285 (*Arai*).

The uniqueness of the present invention is a diamond like carbon (DLC) film that is applied to a slide pipe of a front fork. The application of the DLC film to the slide pipe, provides great usefulness on a front fork. This invention is a new "use" for an existing coating, the DLC film.

As for the usefulness, first, the combination of a slide pipe made of TiN and TiO films and an oil seal, as described in the prior art section of our specification, has a speed dependency, and as the speed becomes lower, the friction becomes lower. On the other hand, the combination of a slide pipe on which the DLC film is formed and an oil seal, has no speed dependency. The friction in the low speed range is a fixed value. Further, this value is greater than the one generated on the slide pipe on which the TiN and TiO films are formed.

The reason why the friction value in the low speed range is greater for a DLC film coated slide pipe, is because an oil film holding surface on the outer peripheral surface of the DLC film is small. Thus, in the low speed operation range of a front fork or when the front fork is driven in a low speed operation range, such as when traveling on a flat, straight road surface or the like, the slide pipe does not move too much, and the road holding property of the tire is improved.

Second, in the high speed operation range or when the front fork drives in a high speed such as when passing through a rough road surface or the like having great irregularity, the low friction coefficient which is a feature of a DLC film, allows the slide pipe to move well, so that the road surface following property is improved.

Further, by forming a groove which holds the hydraulic fluid on a surface of the slide pipe, this friction value can be reduced.

Arai does not teach or suggest applying a coating on the entire slide member. It only disclosed application to a slide portion of a slide member which is not able to be lubricated (See *Arai* at lines 22 to 23 on Column 5).

Winkelmann discloses application of a DLC film to pistons 203 and 203', but not to the piston rod 105. The construction of *Winkelmann* is not able to receive side force, since the piston rod 105 is connected with the universal joint which consists of the concave surface 130 and the convex surface 131. Thus, *Winkelmann* does not disclose, teach or suggest applying DLC film to the slide pipe of the front fork receiving side force.

There is no prior art to show that the combination of DLC films and the oil seal has no speed dependency, and it is greater than the prior combination of TiN, and TiO films and the oil seal, and also that the combination of DLC films and the oil seal shows the fixed friction value irrespective of the speed of the vehicle.

REQUEST FOR EXTENSION OF THE TERM

Applicant respectfully requests an extension of the normal term which expired on September 1, 2004, for two months, to November 1, 2004.

Submitted herewith is a check for \$430 to cover the cost of the extension.

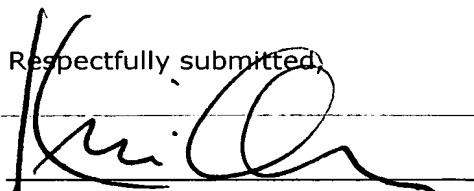
Any deficiency or overpayment should be charged or credited to Deposit Account Number 04-2219, referencing our Docket Number 13528.

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CONCLUSION

Applicant asserts that all of the objections have been obviated and, therefore now respectfully requests withdrawal of the objections, and allowance of the application.

Respectfully submitted,




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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being delivered via first class mail in an envelope addresses to the United States Patent and Trademark Office, Alexandria, VA 22313 on November 1, 2004.



Katherine Bruce